

Amendments to the Claims:

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 (Currently Amended): A method of manufacturing a semiconductor device in which a plurality of combinations of a gate electrode and a gate insulating film are formed so as to extend in parallel on a semiconductor substrate, comprising the steps of:

forming a first insulating film along surfaces of said plurality of combinations of the gate electrode and the gate insulating film, and said semiconductor substrate, respectively; ~~and~~

forming a second insulating film different from said first insulating film on said first insulating film; ~~wherein~~ and

~~the steps of forming said first insulating film and forming said second insulating film are alternately repeated~~ forming additional insulating films by alternately repeating the steps of forming said first insulating film and forming said second insulating film.

2 (Original): The method of manufacturing a semiconductor device according to claim 1, wherein

said first insulating film is formed under a condition that

a concentration of O₃ is set to 0 to 3.0wt%,

a molar ratio of O₃/TEOS is set to at most 3.0,

a temperature for film-forming is set to 450 to 550°C,

a pressure for film-forming is set to 798 to 266hPa, and

an inert gas is used as a carrier gas.

3 (Original): The method of manufacturing a semiconductor device according to claim 1, wherein

said first insulating film is composed of USG, and

said second insulating film is composed of one substance selected from a group consisting of BPSG, PSG, BSG, and USG.

4 (Original): The method of manufacturing a semiconductor device according to claim 1, wherein

said first insulating film has a film thickness of 3 to 5 % of a distance between the gate electrodes of adjacent two of said combinations.

5 (Original): The method of manufacturing a semiconductor device according to claim 1, wherein

the step of forming said second insulating film is performed under a condition that

a concentration of O₃ is set to 8.0 to 17.0wt%,

a molar ratio of O₃/TEOS is set to 3.0 to 15.0,

a temperature for film-forming is set to 450 to 550°C,

a pressure for film-forming is set to 798 to 266hPa,

a total concentration of an impurity composed of at least one of P and B is set to at most 15wt%, and

an inert gas is used as a carrier gas.

6 (Original): The method of manufacturing a semiconductor device according to claim 1, wherein

said second insulating film has a film thickness of 5 to 10 % of the distance between the gate electrodes of adjacent two of said combinations.

7 (Currently Amended): The method of manufacturing a semiconductor device according to claim 1, wherein

~~the steps of forming said first insulating film and forming said second insulating film are repeated~~ the step of forming additional insulating films is repeated until a concave formed by said first insulating film or said second insulating film in a space between the gate electrodes of adjacent two of said combinations is positioned above the upper surface of said gate electrode.

8 (Original): The method of manufacturing a semiconductor device according to claim 1, wherein

said second insulating film is deposited using a reaction gas consisting of a plurality of kinds of gases which flows into a chamber, and

after the step of depositing said second insulating film, a supply into said chamber of at least one of said plurality of kinds of gases is stopped, and a gas which is different from said reaction gas and does not cause a reaction for deposition of said second insulating film flows into said chamber so that a pressure in said chamber is maintained constant.

9 (Withdrawn): The method of manufacturing a semiconductor device according to claim 1, wherein

said second insulating film is deposited using a reaction gas consisting of a plurality of kinds of gases which flows into a chamber, and

after the step of depositing said second insulating film, a supply into said chamber of at least one of said plurality of kinds of gases is stopped, and at least one of said plurality of kinds of gases continues to flow into said chamber so that a pressure in said chamber is maintained constant.

10 (Original): The method of manufacturing a semiconductor device according to claim 1, wherein

said second insulating film is deposited using a reaction gas consisting of a plurality of kinds of gases which flows into a chamber, and

after the step of depositing said second insulating film, at least one of said plurality of kinds of gases flows through a vent line to the outside of said chamber, and a gas which is different from said reaction gas and does not cause a reaction for deposition of said second insulating film flows into said chamber so that a pressure in said chamber is maintained constant.

11 (Withdrawn): The method of manufacturing a semiconductor device according to claim 1, wherein

said second insulating film is deposited using a reaction gas consisting of a plurality of kinds of gases which flows into a chamber, and

after the step of depositing said second insulating film at least one of said plurality of kinds of gases flows through a vent line to the outside of said chamber, and at least one of said plurality of kinds of gases continues to flow into said chamber so that a pressure in said chamber is maintained constant.

12 (Currently Amended): The method of manufacturing a semiconductor device according to claim 1, ~~wherein~~ further comprising

~~after the steps of forming said first insulating film and forming said second insulating film are repeated,~~ step of forming additional insulating films, forming a third insulating film is formed on a film formed later out of said first insulating film and said second insulating film different from said first insulating film and said second insulating film on said additional insulating films.

13 (Original): The method of manufacturing a semiconductor device according to claim 12, wherein

the step of forming said third insulating film is performed under a condition that
a pressure for film-forming is set to at most 266hPa,
a concentration of O₃ is set to 8.0 to 17.0wt%,
a temperature for film-forming is set to 450 to 550°C, and
an inert gas is used as a carrier gas.

14 (Original): The method of manufacturing a semiconductor device according to claim 12, wherein

said third insulating film has a film thickness of at most 1.5μm.

15 (Original): The method of manufacturing a semiconductor device according to claim 12, wherein

said third insulating film is a USG film.

16 (New): A method of manufacturing a semiconductor device in which a plurality of combinations of a gate electrode and a gate insulating film are formed so as to extend in parallel on a semiconductor substrate, comprising the steps of:

forming a first insulating film along surfaces of said plurality of combinations of the gate electrode and the gate insulating film, and said semiconductor substrate, respectively;

forming a second insulating film on said first insulating film; and

forming additional insulating films up to N insulating films, including at least a third insulating film on said second insulating film, wherein odd-numbered films comprise a first composition and even-numbered films comprise a second composition different from said first composition.

17 (New): The method of manufacturing a semiconductor device according to claim 16, further comprising forming a N+1 insulating film on said N insulating film comprising a third composition different from said first composition and said second composition.

18 (New): A method of manufacturing a semiconductor device in which a plurality of combinations of a gate electrode and a gate insulating film are formed so as to extend in parallel on a semiconductor substrate, comprising the steps of:

forming a first insulating film comprising a first composition along surfaces of said plurality of combinations of the gate electrode and the gate insulating film, and said semiconductor substrate, respectively;

forming a second insulating film comprising a second composition different from said first composition on said first insulating film; and

forming additional insulating films on said second insulating film by alternately repeating the steps of forming insulating films comprising said first composition and forming insulating films comprising said second composition.

19 (New): The method of manufacturing a semiconductor device according to claim 18, further comprising, after the step of forming additional insulating films, forming an insulating film comprising a third composition different from said first composition and said second composition on said additional insulating films.

20 (New): A method of manufacturing a semiconductor device in which a plurality of combinations of a gate electrode and a gate insulating film are formed so as to extend in parallel on a semiconductor substrate, comprising the steps of:

forming N insulating films, one on top of the other, on said plurality of combinations of the gate electrode and the gate insulating film, and said semiconductor substrate, respectively;

wherein odd-numbered insulating films $N=1, 3, 5 \dots$, comprise a first composition and even-numbered insulating films $N=2, 4, 6 \dots$, comprise a second composition different from said first composition, and

wherein N is greater than or equal to 3.

21 (New): The method of manufacturing a semiconductor device according to claim 20, further comprising forming a $N+1$ insulating film on said N insulating film comprising a third composition different from said first composition and said second composition.

22 (New): A method of manufacturing a semiconductor device in which a plurality of combinations of a gate electrode and a gate insulating film are formed so as to extend in parallel on a semiconductor substrate, comprising the steps of:

forming a first insulating film, an odd-numbered film, along surfaces of said plurality of combinations of the gate electrode and the gate insulating film, and said semiconductor substrate, respectively;

forming a second insulating film, an even-numbered film, on said first insulating film;
and

forming additional insulating films on said second insulating film by alternately repeating the steps of forming odd-numbered films and even-numbered films, wherein said odd-numbered insulating films comprise a first composition and said even-numbered insulating films comprise a second composition different from said first composition.

23 (New): The method of manufacturing device according to claim 22, further comprising, after the step of forming additional insulating films, forming an insulating film comprising a third composition different from said first composition and said second composition on said plurality of additional insulating films.